

### **REMARKS**

This Amendment is responsive to the Office Action mailed on January 12, 2006. Claims 40, 46, 59, 60, 79, and 80 are amended. Claims 40-80 are pending.

Claims 1, 59, 60, 79, and 80 are objected to because of informalities in the claim language. In particular, the Examiner indicates that these claims lack antecedent basis for "detecting means." Applicant respectfully submit that there is no antecedent basis problem with the identified claims. The Examiner points to line 8 of claim 1 as an example of lack of antecedent basis for "detecting means." Line 8 is the first instance of use of "detecting means" in the claim and there is no use of a definite article such as "the" or "said" before "detecting means" which would lead to an antecedent basis problem. Claims 59, 60, 79, and 80 are similarly worded. Withdrawal of the objection is respectfully requested.

Claims 40, 41, 43-52, 55, 57-72 and 78-80 are rejected under 35 U.S.C. § 102(b) as being anticipated by Thrash (US 5,801,914).

Claims 42, 53-54, 56, and 73-77 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Thrash in view of Saito (US 6,243,018).

Applicants respectfully traverse these rejections in view of the amended claims and the following comments.

#### **Discussion of Amended Claims**

The preamble of claim 40 is amended to specify that the electrical system comprises a power source connected to a current feed terminal for supplying current and to a second terminal, with at least one electrical device connected to a current delivery terminal and to the second terminal, the line arrangement providing electrical power from the power source to the electrical device. Claim 40 is also amended to specify that the at least one current-carrying inner conductor electrically connects the current feed terminal and the current delivery terminal. In addition, claim 40 is amended to clarify that the at least one protective sheath is an at least one electrically

isolating protective sheath surrounding the at least one inner conductor. Claim 40 is further amended to specify that the detector element runs along the supply line within a protective enclosure. Claim 40 is also amended to clarify that the local arc referred to is an arc originating from one of the at least one current-carrying inner conductor.

Claims 59, 60, 79, and 80 are similarly amended.

Claim 46 is amended to conform to the amendments made to claim 1.

### Discussion of Thrash

Claims 40, 41, 43-52, 55, 57-72 and 78-80 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Thrash. This rejection is respectfully traversed. An anticipation rejection requires that each and every element of the claimed invention as set forth in the claim be provided in the cited reference. See *Akamai Technologies Inc. v. Cable & Wireless Internet Services Inc.*, 68 USPQ2d 1186 (CA FC 2003), and cases cited therein. As discussed in detail below, Thrash does not meet the requirements for an anticipation rejection.

Thrash discloses an electrical safety circuit with a breakable conductive element. Thrash discloses an electric blanket 10 with an elongated heating element 12 looped back and forth in an electric blanket shell to provide heat evenly across the surface of the blanket 10 (Col. 2, lines 10-16). The heating element 12 utilizes a positive temperature coefficient (PTC) material 26 which is extruded between and around a pair of spaced conductors 28 and 30. An electrical insulating coating 32 is extruded over the PTC material 26 (Col. 2, lines 25-31). Each conductor 28 and 30 has an insulating core over which conductor wire has been helically wound, with each core being coated with a conducting graphite suspension. The coating applied to each core counteracts the high surface resistance of the PTC material 26, resulting in a low resistance electrical interface between PTC material 26 and each of conductors 28 and 30. In operation, electrical current passes between conductors 28 and 30 and through PTC material 26 therebetween. PTC material 26 provides a resistive heating area throughout the entire length of heating element 12 (Col. 2, lines 45-58; Figure 2). Included in heating element 12 is a conductive element 34 that runs parallel to

conductors 28 and 30 through the length of the heating element. Element 34 is positioned in a gap between PTC material 26 and insulating coating 32 in close proximity to conductors 28 and 30. Element 34 is essentially electrically insulated by PTC material 26 since it is not coated with a graphite suspension. The composition of fiber 34 is such that it breaks when exposed to high temperatures associated with excessive overheating conditions which cannot be compensated for by the self-limiting nature of the PTC material 26 (Col. 3, lines 8-28).

The Examiner is correct in that in the case of overheating in conductive fiber 34 of an electric blanket 10 the fiber 34 breaks. However, the subject matter of Thrash is far removed from that of Applicants' claimed invention.

Applicants' claimed invention as set forth in amended claim 1 is directed towards a line arrangement for electrical vehicles which connects a power source to an electrical device and which includes a detector element which is designed to change its electrical or optical property when a local arc originating from one current carrying inner conductor of the supply line occurs.

Contrary to Applicants' claimed invention, fiber 34 of Thrash is not used to detect any overheating of a single conductor or isolated supply line. Rather, fiber 34 is used to detect overheating in the PTC material 26 which extends between two lines which represent the heating elements of an electric blanket 10 (one line being conductor 28 and the other line being conductor 30).

In other words, in Thrash, the fiber 34 is arranged and designed to detect overheating or other hazard in PTC material 26 but is not designed to detect any problem in one of the electrical lines.

Applicants respectfully submit that the detecting system according to Thrash is not designed or arranged to detect any arcing, overheating, or other damage in an isolated supply line comprising a current supply line extending from a current feed terminal to a current delivery terminal.

Accordingly, Thrash does not disclose or remotely suggest a detector element having at least one of an optical property and an electrical property, where changes in the at least one of the

optical and electrical properties are detectable by detecting means and where the detector element is adapted in such a way that at least one of the electrical and optical properties are irreversibly changed when a local arc originating from one of the at least one current-carrying inner conductor occurs, as set forth in Applicants' claim 1.

Similar arguments apply equally to Applicants' independent claims 59, 60, 79 and 80.

As Thrash does not disclose each and every element of the invention as claimed, the rejections under 35 U.S.C. § 102(b) are believed to be improper, and withdrawal of the rejections is respectfully requested. See, *Akamai Technologies Inc.*, *supra*.

Applicants respectfully submit that the present invention is not anticipated by and would not have been obvious to one skilled in the art in view of Thrash, taken alone or in combination with Saito or any of the other prior art of record.

Further remarks regarding the asserted relationship between Applicants' claims and the prior art are not deemed necessary, in view of the amended claims and the foregoing discussion. Applicants' silence as to any of the Examiner's comments is not indicative of an acquiescence to the stated grounds of rejection.

Withdrawal of the rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) is therefore respectfully requested.

Conclusion

The Examiner is respectfully requested to reconsider this application, allow each of the pending claims and to pass this application on to an early issue. If there are any remaining issues that need to be addressed in order to place this application into condition for allowance, the Examiner is requested to telephone Applicants' undersigned attorney.

Respectfully submitted,



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